

and a medley of confusion as regards working arrangements. Many of the accommodations have been kept intact in the small design, although quite inappropriate, thus ensuring for Fulham, if the house should be built as planned, one of the most ill-arranged and constructed of modern workhouses.

It is hardly necessary to add, that large and showy drawings were got up with considerable effect (although sections were wholly wanting) with front views, and perspective, coloured and varnished with suitable landscape, in the "neatest style," probably by one of the able artists who so kindly devote themselves to assist architects in producing "effects" on judges. But the subject is too serious to joke on. The guardians and officers of the Fulham Union are honourable men, but wanting, as a matter of course, the right sort of knowledge, and, scorning assistance, have placed themselves in a difficulty. We venture to think that they would not willingly commit an injustice towards those who, depending on their integrity, have spent time and talent in the preparation of designs; and, in order that they may not do so, we intreat them, even now, to take proper advice, and retrace their steps, if found to be taken in error.

ARCHITECTURAL COMPETITIONS.

SIR.—Instead of its being surprising that many committees make gross blunders in deciding on competition plans, and so become exposed to the accusation of being influenced by improper motives, the wonder should rather be that they ever arrive at a correct decision. In the report of the sub-committee of the Health of Towns' Association, on the pending Health of Towns' Bill, is the following passage: "The very assumption on the part of the local authorities, or their representatives, that they can carry out the requisite works by themselves, is only a deplorable proof of the ignorance of both as to what is required to be done. The baker who is the chairman of the City Commission of Sewers has declared that he and they are 'willing' to carry out complete works of sanitary improvement. He might as well say that he is 'willing' to construct a well-working locomotive steam-engine. Such assurances from such men only shew that they know not what they promise."

The assumption, for instance, that half a dozen guardians of the poor can duly decide on the plans for a workhouse, or that as many magistrates can form an accurate judgment on those for a lunatic asylum, is not less preposterous. *Ne sutor ultra crepidam*. The guardians or the magistrates may be not only "willing," but anxious to decide fairly; but it does not follow that they can do so, or that they can avoid laying themselves open, by the decision to which they come, to grave suspicions of having acted under some improper bias.

Still, whatever may be the objections, these unprofessional committees, being either the paymasters or their representatives, cannot be expected to give up their privilege or duty, whichever it may be, of deciding on competition plans; and I therefore beg to suggest, for the consideration of architects, a mode of obviating the existing evils.

Giving committees full credit for intending to act uprightly, it is fair to suppose that they do not know what are the most important points to which their attention should be directed, and that they are often caught by a pretty elevation, when the plans or sections annexed to it are almost worthless.

I would therefore submit, that the Institute of Architects, or some other body, whose authority on such matters might be reasonably deferred to, should publish papers of instructions for the guidance of committees having to decide on competition plans, pointing out to them the course which they should take in making their examination, and directing their attention to the most important details of elevations, plans, and sections, for buildings of various descriptions.

I would also submit, that every architect who sends in any competition plans, should send with them the published paper of instructions applicable to the competition in question.

These precautions against unfairness or

ignorance might easily be taken by architects, without giving any offence to committees. A further precaution, which the adoption of my proposals might lead to, would be to impose on the committees the necessity of making written reports of the grounds for their decisions; but, of course, the architects could not, at present, insist on such reports being made.—I am, Sir, &c., N. R.

DRAINAGE OF TOWNS.

SIR.—It is now pretty well proved that the sewers of London deserve no other epithet than that of continuous cesspools. Their area being disproportionately large to the bulk of their contents, the force of the current is insufficient to propel these to the outfall, and a deposition of solid matter takes place throughout their extent, which becomes permanently adherent to the bottom of the sewer, and getting channelled by the ordinary dribbling going on within, constitutes, in fact, the actual walls or substance through which the sewage flows. The working part of the sewer, then, is lined with the very matter it is intended to convey away; it possesses evils to which the ordinary cesspool is not chargeable; it is in free contact with the open air, and is liable to a continual partial movement, and an occasional thorough stirring up of its contents; the frequent accession, from heavy rains, to the body of the current within it, serves to denude the solid deposit of its superficial coating, thereby exposing a fresh surface (foul in its freshness) of putrescent matter, to be acted on by the abundant supply of air within; and as this acquires in its transit and sojourn in these immense canals a considerable increase of temperature, the most favourable conditions are presented for the further development of putrefactive fermentation. Here, then, is a vast laboratory of corruption, lying a few feet beneath the surface on which dwell upwards of two millions of people, winding its tortuous way in endless intricacies among them, just sufficiently covered in to be a reservoir, as well as a generator, of foul mephitic vapours, which finding a ready outlet through the numberless open gully-holes, do their work of mischief as surely as the pure air of heaven does its work of good; the materials, too, of this mighty gasometer, the mass of putrid matter, the exuvie of millions of beings, mixed with endless varieties of putrescent animal and vegetable refuse, besides belching forth their foul and poisonous breath through the untrapped surface inlets, is at length sluggishly and partially excreted into the Thames, thus rendering this noble river an open sewer, and giving it at low water all the appearance of a dirty ditch. And by this system of poison-gas making—of poison-gas supplying in unlimited quantity to the lungs of the inhabitants—by this system of holding vast stores of *fever mixture* in stock—by the keeping in action this monstrous inhaler of cloacine vapour, less rapid, but more lasting in its effects than the fashionable chloroform—by this system of converting the Thames into a dirty ditch, and its banks into a mass of evaporating liquid filth, as disgusting to the eye as baneful to the health;—by this monstrously absurd system do we lose an agricultural agent valued at many millions per annum; we permit that, which is nothing more than food purchased at a dear rate, brought from all parts of the earth, and which has merely undergone one of the stages in the great chemical process of nature,—we permit that to become a source of disgusting annoyance, of pestilence and contagion, which, if passed through the channel which science points out with an unmistakable hand, would reward our labours with fertility and abundance. Yet are there remedies for these evils, simple, efficient, practicable. The plan that presents itself to every one who has cast a thought on the subject, is that of rendering the house drainage distinct from that of the surface; yet how are we to do this, and to carry out the details of the method consistent with economy, facility, and the preservation of the product without the production of noisome effluvia? I would propose the establishment of a distinct system of tubes of glazed earthenware for the house drainage, and that of excrementitious and offensive matter of every

description from every source, such as stables, cow-houses, slaughter-houses, urinals, &c. &c., and that this line of tubes be inclosed in the sewers, which are confessedly many times too large for their present functions, and that this soil, or excretory duct, be a closed one, its continuity being no where interrupted, having the various inlets from the houses and other buildings, and only one grand outlet, and possessing no communication with the external air, but instead of terminating where the sewers now do, on the mud banks of the Thames, or where they are proposed to do, further into the body of the river, I would carry the soil ducts along its banks on each side—above or below ground would matter not to the principle of the plan—and convey it completely away from town to the marshy banks below Woolwich, or even further off, if desirable; and on any locality presenting itself as most eligible for the purpose, I would erect a terminus on each side, in which should be the grand reservoir or receptacle, sunk in the ground, or otherwise, which should be hermetically closed; from this the fluid contents could be raised, when necessary, by an exhaustion pump, worked, of course, by steam-power. The sewage, even when devoid of the surface water, would be too bulky to admit of being easily conveyed away, but it might at once be dried, and become the valuable poudrette, the human guano, the great value of which has been proved beyond all doubt or question. The process of Dr. Ayres, described in No. 1,273 of the "Mechanic's Magazine," would suffice to reduce the whole mass to a perfectly dry powder, as rapidly as it accumulated, without evolving any feid gas whatever; the process even on this vast scale would be no more unwholesome or noisome than that of an ordinary manufactory for other purposes.

The advantages which I conceive would accrue from this complex system of drainage, carried out and completed in the manner proposed, would be these:—1. The concentric arrangement of soil-duct within the aqueduct would be the most economical of any plan yet projected, consistent with the preservation of the product; and being enclosed within the present enormous sewer, it would at any time be accessible in case of obstruction, or other derangement; any interruption in the surface drainage would not affect the soil-duct, which would be always performing its function of excretion by the *ris a tergo*, and the exhaustion in the reservoir. By a connection with the water-pipes, supposing each of the inlets to be armed with a valve, the soil-duct could be flushed with ease and efficiency. The sewers containing little more than water, the necessity for trapping the numberless inlets would be abolished. Were the cess-stands to undergo the desirable modification proposed by me in a recent number of THE BUILDER, the mere soilage of the streets would be too insignificant to render the sewers, even in their present exposed state, a source of annoyance. The sewage being deprived of the surface drainage, would admit of being much more rapidly reduced to a proper condition for agricultural purposes, and the powerful manure thus produced could be shipped off, or conveyed by railway, &c., from the wharfs of the termini, with great facility; and it is to be remembered that by this desiccating process, the soil loses none of its fertilizing properties, but merely its redundant moisture. The clumsy system proposed and approved of, of erecting vast chimney shafts, with currents of heated air, for ventilating the sewers, and thereby contaminating further the stratum of air above the houses, already sufficiently intruded upon by the masses of soot, vapour, and irrespirable gases now furnished by the house chimneys, would be rendered needless. The plan of sinking large iron tanks in various parts of town, and pumping up their contents, to be conveyed away, is operose and complicated,—why do that by instalments which can be effected in one single process? Of course, where sewers do not already exist, a water or surface drain, and a cloaca comes would be laid down together, or the soil-duct could be quite independent, in structure, direction, and termination, of the surface drain. To all towns, whether situated high or low, this system of drainage is equally applicable.—I am, Sir, &c.

F. H. WALLIS.